# THE TYPOLOGICAL CLASSIFICATION OF TOURIST DESTINATIONS: THE REGION OF VALENCIA, A CASE STUDY

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# THE TYPOLOGICAL CLASSIFICATION OF TOURIST DESTINATIONS: THE REGION OF VALENCIA, A CASE STUDY


## Abstract

This study establishes a classification of the tourist destinations of the Region of Valencia in Spain. A cluster analysis has been conducted on a wide range of indicators related to the tourism activity of the destinations, which has then been applied a set of 60 coastal destinations and 482 inland municipalities in the region. Spatial reference frameworks are essential for applying and developing tourism planning and promotion policies. The results obtained reveal their sensitivity to the configurations generated by these data analysis techniques, the variables used in the analysis and the group of destinations taken as a reference for the classification. They also confirm the exceptionality of the case of Benidorm and the existence of tourism dynamics and processes that are manifested unequally across the territory. The latest advances within this technique are applied which will improve the robustness of the results.


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## 1.-Introduction

The delimitation and classification of tourist destinations constitutes a basic tool for analysing and understanding the tourism reality of a territory. It may also be useful for implementing entrepreneurial actions and for designing a tourism policy adapted to the different circumstances of each destination. In fact, operational concepts are needed to individualise spatial reference frameworks or units that are essential for applying and developing policies and programmes related to tourism planning and promotion. One notable methodology that has been used to carry out these processes of delimiting and classifying tourist destinations is the cluster analysis approach, which comprises a classification analysis of a set of variables related to the tourism activity of each type of tourist destination.

Applied to the tourist destinations of the Spanish Mediterranean coast, a recent series of studies by Perles, Ramón, Sevilla and Moreno (2016a; 2016b) and Perles, Ramón, Ivars and Such (2018), compare the different aspects and impacts of the tourism activity based on a prior classification of the destinations as either holiday (hotel-based destinations) or residential (specialised in second residences), carried out by Perles, Ramón and Sevilla (2011) – the latter will be used as a comparative base to contrast the results obtained in this study (see Table 1). Logically, the validity of the results obtained depends on the quality of the classification carried out. The refinement in the identification of typologies constitutes an area that requires improvement in this field of research.

(Table 1 about here)

Based on this approach, this study seeks to establish a characterisation of the destinations in the Region of Valencia, one of the most relevant tourist regions of the Spanish and European Mediterranean coast.

Unlike the study by Perles, Ramón & Sevilla (2011), which only analyses coastal destinations, this study also includes the inland municipalities of the region. This is justified by the recent increase in the appeal of the pre-coastal destinations among the new waves of residential tourists who are attracted to them by features (particularly peacefulness) that have been partly lost in the more consolidated coastal destinations. Therefore, as opposed to widening the zoom, this study seeks to narrow the territorial focus, limiting it to a specific region and observing in detail what is happening in this territory. This represents a novelty with respect to previous studies on the topic (e.g. Sorribes, Martínez, Moles and Colom, 1995; Aurioles, Fernández and Manzanera, 2008; Triviño and López, 2008; Merinero, Pulido and Navarro, 2014; Sánchez, Rengifo and Sánchez, 2017). As far as the authors are aware, this is the first time that a study with such a wide set of destinations in this important tourist region has been carried out.

Finally, with respect to the methodology, fundamental novelties are introduced in the analysis carried out. First, bootstrap methods are applied to the groups obtained in order to improve the robustness of the results. Second, a wide range of indicators are used, making use of those gathered in the framework of the White Paper on a new tourism strategy for the Region of Valencia (Generalitat Valenciana, 2016).

## 2.-Methodology and data

This study takes the same approach as Perles, Ramón & Sevilla (2011) for classifying the destinations using a cluster analysis. Among the different procedures existing to conduct the cluster analysis, those most notable are the hierarchical cluster and non-hierarchical

cluster, with the *k-means cluster* being the reference in this field. In empirical studies, the two techniques are usually combined.

The analysis methodology applied in this study is summarised as follows. First, the 542 available destinations have been divided into two large groups, namely: coastal destinations (60 destinations) and inland destinations (482). Subsequently, for each of these large groups, the optimal number of groups has been established using statistical techniques, Furthermore, a classification analysis has been carried out through the *k-means* algorithm on the optimal number of groups suggested in the exploratory phases. Finally, the robustness of the groups obtained has been tested through a bootstrap test based on 100 replicates.

The variables (previously standardised) considered for the analysis related to the tourism activity of the destinations are reflected in Table 2.

(Table 2 about here)

## 3.-Results obtained

### 3.1,- Coastal destinations

The optimal number of groups has been determined using the *kmeansruns* function of the *(fpc-R package)* (Henning, 2015) with the two criteria *average silhouette width* and *Calinski-Harabasz* (1974). The first establishes an optimal number of groups of 7, while the second generates an optimal group size of 6. This number of groups far exceeds those established in Perles, Ramón & Sevilla (2011). Thus, in the latter case, the analysis enriches and adds nuances, further subdividing the destinations beyond the two groups indicated in the reference work.

The detailed classification obtained based on the *k-means* algorithm with seven predetermined groups is reflected in pages 309 and 310 of the White Paper on Tourism of the Region of Valencia (Generalitat Valenciana, 2016). However, a classification of

six or seven groups would be inoperative for subsequent research. For this reason, here, a more meaningful and parsimonious classification is subsequently presented with three groups (see Figure 1) which are also compared (only among the coastal destinations) with the reference study.

(Figure 1 about here)

The results confirm that there is a more or less stable core of residential tourist destinations (Group 1) made up of those close to Torrevieja - the residential destinations par excellence in the Region of Valencia -, and the exceptionality of the case of **Benidorm**, which appears grouped together with the city of **Valencia** in Group 3. The remaining destinations (Group 2) make up a mixed or undifferentiated model somewhere between the purer residential destinations and the holiday model such as Benidorm.

A comparison with Table 1 highlights the relatively low level of concordance between the classification obtained for these destinations by Perles, Ramón & Sevilla (2011) and that obtained in this exercise. Only 14 of the 29 (48.27%) destinations analysed appear consistently in the same category in both studies. This relatively low level of concordance is due to the different number of groups imposed on the algorithm (two in the case of Perles, Ramón & Sevilla (2011) and three in the current case), and the different battery of variables used in the two studies. This reveals the high sensitivity of these classification tools to the different configurations and options that can be used in this field. Likewise, the dynamic nature of the tourist destinations and the convergence process that may be observed between them in recent years (basically derived from the economic and property crisis) would explain the different configuration of the clusters and the shifting of destinations between them over time.

Therefore, the result indicating that different classifications are obtained depending on the set of destinations and variables considered in the analysis highlights two clear

implications of these types of studies. First, that it is difficult to generalise the conclusions of studies such as those of Perles, Ramón, Sevilla & Moreno (2016a,b) regarding the different characteristics of destinations based on classifications obtained through cluster analysis techniques as they are limited to the set of destinations and variables considered in each study. Second, and in contrast, the studies reveal that some of the destinations considered do appear to be consistently classified in the same groups, and clear figures of destinations appear that can be clearly characterised and can be used in the future. Furthermore, as machine learning techniques to illustrate the algorithms on the basic characteristics of each type of destination advance, the analysis approach will shift from non-supervised learning (cluster analysis) to classification techniques using supervised learning (Bayes Naive Classifer, Support Vector Machines, Neural Networks, etc.), possibly improving the classifications obtained and the quality of the analyses.

### 3.2.-Inland destinations

The group of inland destinations is made up of 482 municipalities which have different realities and less weight in the tourism phenomenon. This translates into a lower robustness of the classifications obtained with respect to the coastal case, and therefore, a higher complexity in the interpretation of the groups obtained.

The range of groups established for the inland destinations oscillates between two, obtained using the *kmeansruns* function using the average silhouette width criterion and 12, obtained with this same function but using the *Calinski-Harabasz* criterion (1974). As in the previous case, the detailed results of 12 groups are presented in the White Paper on Tourism of the Region of Valencia. But here, in order to generate a more operative classification which may be used in subsequent analyses, Figure 5 presents the results of a classification of the inland destinations of the Region of Valencia in three groups.

The data confirm the exceptionality of Crevillente and its camping activity and clearly distinguish between smaller municipalities with an agricultural activity of relatively high relevance that attract residential tourists (foreign retired residents or semi-residents who spend most of the year in these destinations) and larger inland municipalities and towns in which industrial activity is predominant and where the tourism functionality is relatively low.

## 4.- Conclusions

This study establishes a classification of the tourist destinations of the Region of Valencia (Spain). A cluster analysis has been conducted on a battery of indicators gathered in the elaboration of the White Paper on a new tourism strategy for the Region of Valencia.

The results obtained reveal their sensitivity to the variables used in the analysis and the group of destinations taken as a reference for the classification. Among the coastal destinations, the results obtained confirm the exceptionality of the case of Benidorm and the existence of tourism dynamics and processes that are manifested unequally across the territory. However, a process of convergence may be observed between the destinations, diluting the differentiation between holiday destinations and residential destinations as a consequence of the property boom prior to the economic crisis of 2007. In the case of inland destinations, the interpretation is made more complex due to the lack of robustness in the results obtained and the low tourism functionality of many of these municipalities. However, there are different degrees of specialisation (rural accommodation in a strict sense, camping, foreign residents, second residents of the population with ties to the municipality, medium-sized towns with a low tourism specialisation, etc.), which reveal the selective nature of the territorial implementation of tourism in inland spaces and, consequently, their different impact in environmental and socio-economic terms.

The comparison made with previous studies indicates that there are two important aspects that have been referred to previously. First, the conclusions drawn by studies based on the classifications of destinations obtained through cluster analysis techniques can only be applied to the set of destinations and variables considered in each case. And second, when some of the destinations considered are consistently classified in the same groups in different studies, these results may serve as indicators to inform the different classification algorithms which types of destinations should be found, modifying the analysis approach from non-supervised learning to supervised learning, which opens new possibilities for scientific development with respect to the current state of the question.

Although with its limitations, the exercise carried out has important implications for management. On the one hand, the analysis provides a more reliable characterisation of the territorial-tourism model of the Region of Valencia insofar as it incorporates demographic and socio-economic variables in the tourism analysis and studies territorial behaviour when the tourism planning instruments are frequently exclusively based on data derived from regulated tourism supply. On the other hand, the typological classification is useful for the design and execution of policies adapted to the specific needs of each set of municipalities. Finally, it is important to point out that the cluster analysis is complementary to other methodological approaches or management criteria aimed at improving the understanding of the specificity of tourism spaces for analytical purposes or the planning and management of tourism destinations.

The study conducted also paves the way for future lines of research which follow two parallel paths in this field. First, the application of cluster analysis techniques specifically designed to facilitate the classification of complex or fuzzy entities (fuzzy cluster techniques) which have intermediate characteristics in many variables, as is the case of many of the destinations analysed in this study and in those which the classic algorithms

such as the *k-means cluster*, although reinforced by bootstrap testing, encounter difficulties to obtain robust classifications. On the other hand, taking advantage of the destinations that are consistently classified throughout different studies to modify the analysis approach from a non-supervised perspective (cluster techniques) to supervised learning, possibly improving the classifications obtained and the understanding of the phenomenon under study and the quality of the analyses conducted based on them. For this purpose alone, this study represents a clear step forward with respect to the present state of the question in this field.

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Table 1: Residential and holiday destinations in the Region of Valencia

| Residential destinations | Holiday destinations |
|---|---|
| Calpe | Benidorm |
| Dénia | Elche |
| Jávea | Alfaz del Pí |
| Santa Pola | Altea |
| El Campello | Finestrat |
| Pilar de la Horadada | Guardamar del Segura |
| Teulada | Orihuela |
| Torrevieja | Villajoyosa |
| Benicasim | Vinaròs |
| Cullera | Benicarló |
| Gandía | Burriana |
| Bellreguard | Oliva |
| Daimús | Sagunto |
| Sueca | |
| Tavernes de la Valldigna | |
| Xeraco | |

Source: Perles, Ramón and Sevilla (2011); Perles, Ramón, Sevilla and Moreno (2016b)

Table 2: Variables used for determining the destination clusters in the Region of Valencia

| Element | Variable | Definition | Year of reference | Source |
|---|---|---|---|---|
| Demographics | POB2015 | Number of inhabitants in the destination | 2015 | INE Municipal Register of Inhabitants |
| | VPOB0615 | Growth of the population of the destination between 2006 and 2015 | 2006 2015 | |
| | POBMAY65 | Percentage of the population aged over 65 | 2015 | |
| | PIMRES | Percentage of immigrant residents | 2015 | |
| | PIMLAB | Percentage of labour immigration | 2015 | |
| | POREXTRAN | Percentage of foreign residents in the destination | 2015 | |
| Tourism supply | PLAZASHOT | Hotel beds registered in the destination | 2015 | IVE Municipal and District Tourism Supply |
| | PLAZASAPA | Beds in apartments registered in the destination | 2015 | |
| | PLAZASCAM | Beds in camp sites registered in the destination | 2015 | |
| | PLAZASRUR | Beds in rural accommodation registered in the destination | 2015 | |
| | PLAZASALB | Beds in hostels registered in the destination | 2015 | |
| | TOTALREGL | Total regulated beds in the destination | 2015 | |
| | TFTRES15 | Residential tourism function rate | 2006 2015 | |
| | VTFTRES | Variation in the residential tourism function rate | | |
| | TFTREGL15 | Regulated tourism function rate | | |
| | VTFTREG | Variation in the regulated tourism function rate | | |
| | PVPUT11 | Percentage of properties potentially used for tourism (second residence) in the destination | 2011 | INE Population and housing census |
| Economic situation | PARO2015 | Unemployment rate with respect to the potentially active population | 2015 | Ministry of Labour, Social Security and National Statistics Office |
| | VPAR0615 | Growth in the unemployment rate with respect to the potentially active population between 2006 and 2015 | 2006 2015 | Ministry of Labour, Social Security and National Statistics Office |
| | GTOSHAB15 | Expenditure per inhabitant in the municipal budget | 2015 | Ministry of Economy and Finance |
| Human pressure | PREHUX15 | Maximum municipal human pressure in the destination | 2015 | |
| | VPRES615 | Variation in the Maximum municipal human pressure in the destination between 2006 and 2015 | 2006 2015 | |

Figure 1: Grouping of coastal destinations into three predetermined groups

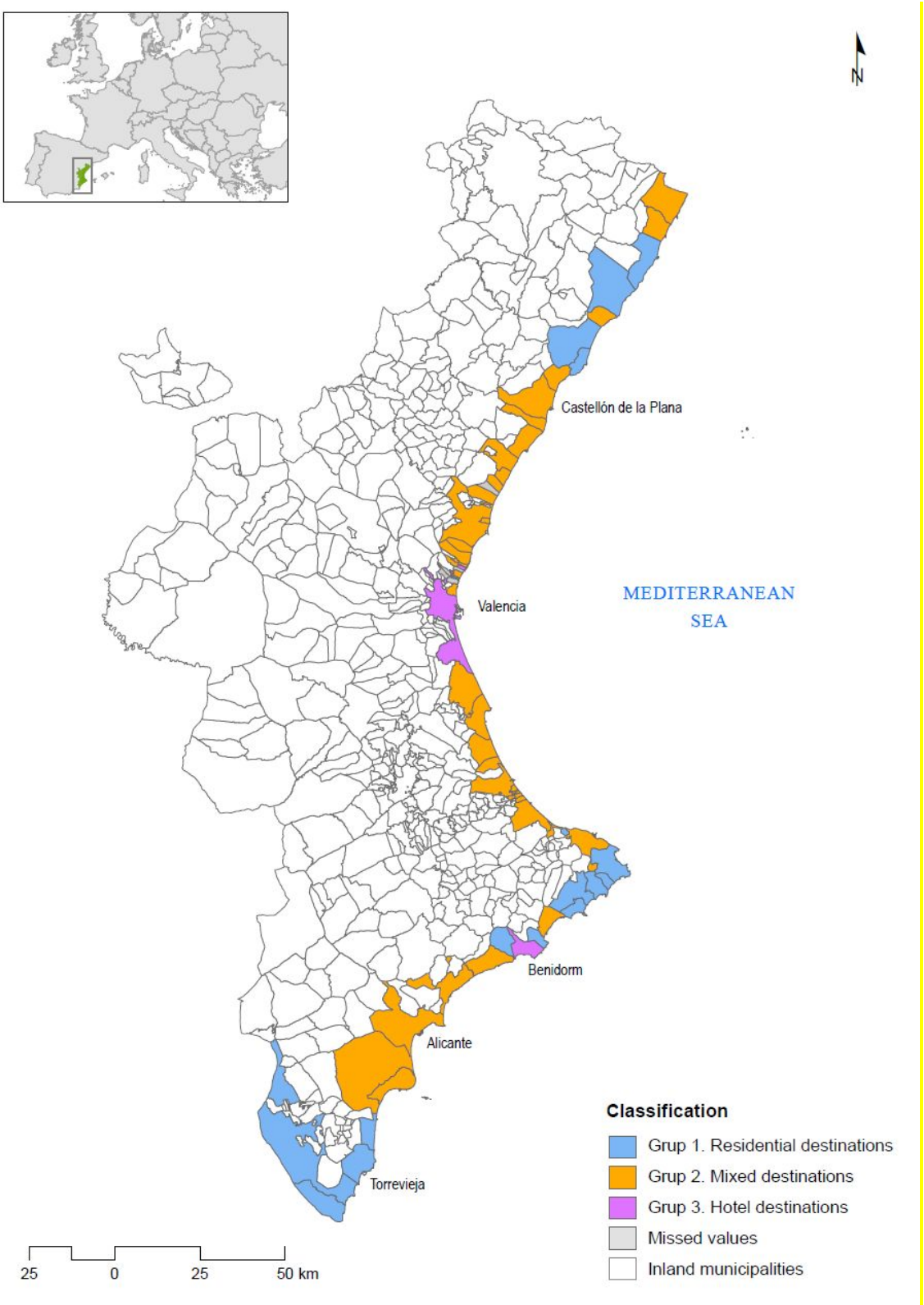

Figure 2: Grouping of inland destinations into three predetermined groups